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Effect of Early vs Late Feeding on Hospital LOS in Premature Infants with RDS.

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OBJECTIVE: To determine whether a relationship exists between early initiation of feedings and overall hospital length of stay in premature infants (24-34 weeks post conceptual age) with RDS.

BACKGROUND: The LOS of infants with RDS admitted to NICU is influenced by many factors including birth weight, gestational age, patient severity of illness, and nutritional management. There is wide variation in nutritional management of these infants, including timing of initial feedings.

METHODS: Data was retrospectively analyzed for 1656 NICU infants with RDS followed by Paidos Health Management Services from October 1998 through August 2000. We excluded cases less than 24 weeks PCA, and greater than 34 weeks PCA, as well as surgical cases, congenital anomalies, and deaths. Initiation and progression of feedings were determined by the attending physician without a standardized protocol. Cases were classified in two main groups: early feeders (first feed at less than or equal to 7 days from birth), late feeders (first feed at greater than 7 days from birth). Each group was then subdivided into post conceptual age groups. The groups were compared for LOS, days on ventilator, days on oxygen, and incidence of NEC.

RESULTS: The study group consisted of 955 early feeders, and 701 late feeders. For 32-34 week PCA infants there was a statistically significant difference in LOS between early and late feeders ($p<0.0001$-0.0004). However, PCA groups 33 and 34 weeks also had a statistically significant difference for percent days on ventilator ($p=0.0059$ and 0.0143 respectfully) and percent days on oxygen ($p=0.004$ and 0.0073 respectfully). 24-31 week PCA infants showed no significant differences in LOS. There was also no difference in weekly weight gain from 0-28 days between early and late feeders across all PCA groups.

Gestational Age Group	Feeding Group	N	Mean LOS	sd	p-value	Mean Percent Vent Days	sd	p-value	Mean Percent Oxygen Days	sd	p-value
24-25	early	18	92.22	28.85	0.9649	64.06%	27.74%		66.78%	28.77%	
	late	55	91.89	22.79		56.51%	33.60%	0.3490	57.60%	33.77%	0.2689
26-27	early	42	66.62	13.39	0.1786	42.00%	29.75%		44.63%	30.12%	
	late	115	70.31	19.11		41.58%	32.97%	0.9394	45.35%	34.75%	0.8992
28-29	early	93	51.65	14.91	0.1662	20.77%	22.36%		26.77%	27.50%	
	late	167	54.33	14.96		26.70%	29.34%	0.0687	31.34%	32.05%	0.2286
30	early	91	40.55	12.64	0.4647	21.04%	24.96%		24.05%	26.05%	
	late	105	42.04	15.79		13.11%	17.67%	**0.0123**	17.80%	22.26%	0.0747
31	early	97	30.25	10.20	0.0628	13.98%	20.45%		15.87%	22.12%	
	late	88	33.20	11.18		18.74%	27.41%	0.1859	22.74%	30.41%	0.0834
32	early	178	23.41	11.58	**0.0003**	10.44%	13.86%		11.99%	14.73%	
	late	77	29.36	11.79		13.30%	22.43%	0.3024	15.57%	24.25%	0.2318
33	early	209	16.32	7.13	**< 0.0001**	9.83%	11.78%		12.35%	13.53%	
	late	59	25.95	12.21		19.15%	24.37%	**0.0059**	23.75%	28.47%	**0.0040**
34	early	227	12.77	7.25	**0.0004**	13.25%	17.59%		16.51%	17.76%	
	late	35	19.63	10.10		24.15%	24.21%	**0.0143**	30.64%	28.69%	**0.0073**

CONCLUSIONS: There was no statistically significant relationship between timing of initial feedings or weekly weight gain (1st 28 days) and LOS for 24-31 week infants. There was a difference is LOS between early vs. late feeders at 33-34 weeks. However, the late feeders at 33-34 weeks were possibly more ill as evidenced by more ventilator and oxygen days. This increased illness may account for the longer LOS in those groups.

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